

**Claims**

1. Substantially flat rotating field antenna comprising a central loop (1) and coplanar eccentric loops (2), antenna characterized in that, the central loop (1) creating a magnetic field essentially perpendicular to the antenna, the antenna comprises four adjacent coplanar eccentric loops (2), supplied in such a way as to create a rotating field predominantly in a plane parallel to the plane of the antenna, the centres of gravity (G) of the eccentric loops (2) being arranged substantially on the periphery of the central loop (1).

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2. Antenna according to claim 1, characterized in that the eccentric loops (2a, 2c) are associated in pairs of non-adjacent loops (2a, 2c) so as to generate electromagnetic fields of opposite phases in said pair.

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3. Antenna according to claim 2, characterized in that the two eccentric loops (2a, 2c) of a pair are connected in such a way that a same current is flowing through them in opposite trigonometric directions.

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4. Antenna according to any one of the claims 1 to 3, characterized in that the four eccentric loops (2) are arranged symmetrically with respect to the centre of the central loop.

5. Antenna according to any one of the claims 1 to 4, characterized in that the central loop (1) is substantially rectangular.

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6. Antenna according to any one of the claims 1 to 5, characterized in that the eccentric loops (2) are substantially triangular, an apex of each triangle being located in the central zone (3a) of the antenna.

7. Antenna according to any one of the claims 1 to 5, characterized in that the eccentric loops (2) are substantially rectangular.

8. Radiofrequency identification system comprising a rotating field antenna  
5 according to any one of the claims 1 to 7, characterized in that it comprises a radiofrequency generator (7) comprising first (8) and second (9) outputs respectively supplying first (S1) and second (S2) excitation signals alternately respectively to the central loop (1) and to the eccentric loops (2).

10 9. System according to claim 8, characterized in that it comprises phase shift means connected to the second output (9) and supplying phase quadrature signals (S3, S4) to the eccentric loops (2d, 2c).

15 10. System according to claim 8, characterized in that the eccentric loops (2a, 2c) are associated in pairs, the two loops (2a, 2c) of a pair being connected to one another and to common terminals (6), so that a same current (I) flows through them in opposite trigonometric directions, the system comprising a power divider (10) connected to the second output (9) of the generator (7) and supplying phase quadrature signals (S3, S4), on two outputs (11, 12),  
20 respectively applied to the common terminals (6) of each of the two pairs.

11. System according to claim 8, characterized in that the radiofrequency generator (7) comprises means able to supply first (S1) and second (S2) excitation signals at different frequencies.